SOLAR FOR ALL

WHAT UTILITIES CAN DO RIGHT NOW TO BRING SOLAR WITHIN REACH FOR EVERYDAY FOLKS

When customers invest in solar, everyone benefits: locally generated solar power helps us all avoid paying for new, costly power plants and transmission line upgrades. Also, local solar means less power that utilities have to provide during hot, sunny days when electricity is most expensive to generate. And when utilities run their plants fewer hours, this produces less environmental harm and pollution. Solar power also puts boots on the roof in our communities, creating good-paying, local jobs that can't be outsourced. Jobs in the solar industry—which employs an increasingly diverse workforce of minorities, women, and veterans—pay $20 to $60 per hour on average.[1]

When homes and businesses invest in solar, they are able to stabilize their energy bills and protect against future increases in utility rates, saving money over the life of the solar system, which can be 25 years or more. Low-to-moderate income (LMI) households in the South spend a higher percentage of household income on energy expenses than higher income families and thus have the most to gain from affordable clean energy.[2] However, even as solar energy technologies decline in price, many LMI families are still unable to benefit from solar technology due to existing barriers, including the high upfront costs of installation, lack of access to financing options, low credit scores, inability to harness federal and/or state tax incentives, lack of home ownership, and residence in multifamily housing with no control of roof space. As a result, rooftop solar installations can be found in affluent neighborhoods but often remain beyond economic reach for many LMI households.

This income disparity in solar adoption has recently captured the attention of the Obama Administration. In July 2015, the White House launched an initiative to increase solar access for all Americans.[3] Additionally, the Environmental Protection Agency released the Clean Power Plan (CPP) in August 2015, requiring states to develop and submit individual compliance plans for reducing carbon emissions. Because solar energy emits zero carbon emissions while generating reliable electricity, increasing solar energy deployment can help states reduce their emissions in compliance with the CPP.[4] Furthermore, the best practices outlined in this policy brief can help ensure that solar programs adopted to comply with the CPP are benefiting the customers—and communities—that have historically been the most impacted by fossil pollution.

In light of this national attention to solar, we encourage utilities to implement these best practices to ensure solar access for all customers. By leveraging the precipitous declines in solar costs and innovative program design, utilities can ensure that all customers, regardless of income and ability to install solar generation, can now benefit from solar power. We encourage utilities to adopt the following best practices to ensure that solar is available to any household that wants it: diverse financing options, community solar programs, and programs leveraging existing low-income and rural energy assistance funding.

In designing programs that expand access to all customers, utilities should keep the following guidelines in mind. First, to be effective, programs should guarantee immediate economic savings for LMI participants, allowing families to save more than they pay in year one. Additionally, programs should focus on community development not only through access to solar but also with energy conservation and education, workforce development, local hiring, and siting of projects in disadvantaged and underserved communities where appropriate.

I. Support diverse financing options that make solar affordable

In the same way that LMI customers are able to finance the purchase or lease of a car or home, these customers should have a range of options for financing cost-effective clean energy investments. These common sense financing tools have been shown to expand access to solar. Financing options allow LMI customers who can't afford to purchase a solar system outright to still benefit from the savings of rooftop solar by entering into a financing arrangement with their utility (via on-bill financing) or with a solar installer (through a solar lease or power purchase agreement). Financing solar panels allows homeowners to avoid large upfront installation costs for a solar system and spreads out the costs through monthly payments.

A solar lease or PPA is a contract in which a homeowner pays for solar panels owned by a provider through a monthly contract, thereby reducing or eliminating upfront costs to the homeowner. These arrangements can be third-party sponsored, utility-sponsored, or some combination of both, and typically last anywhere between 15 to 25 years. Since the monthly cost of the arrangement is set at the outset, the homeowner is better insulated from future increases in energy rates. At the end of the contract, homeowners may have the choice to renew the contract, purchase the system, or have the equipment removed.[5] If the homeowner moves, he can transfer the contract to the new homeowner. In states where these solar financing options are available, rooftop solar installations are currently on the rise among middle class households with incomes ranging from $40,000 to $90,000.[6]

Some utilities are relying on outdated monopoly laws to argue against customers' right to enter into solar financing contracts with independent solar companies. Instead, we encourage utilities to work with solar advocates to clarify that the South is open for solar financing options that give customers more energy choices. For example, Georgia Power recently supported a new law, the Solar Power Free-Market Financing Act, which clarifies the legality of a range of solar financing options for Georgians.[7]

Unfortunately, some solar leasing companies require high credit scores, so customers with low credit scores may not be able to take advantage of certain third party leasing options. Another way for utilities to make solar accessible to LMI customers is through on-bill financing. On-bill financing[8] (OBF) refers to programs that give customers the ability to finance energy efficiency and clean energy improvements made to their homes at no upfront cost. OBF allows customers to pay for the efficiency measures over extended terms on their monthly utility bills, and the savings from efficiency improvements typically exceed the monthly cost, which allows customers to save both energy and money from day one. OBF eligibility can be determined using utility bill payment history instead of or to complement a full credit report, allowing customers with lower credit scores to access financing.

OBF programs increase access to clean energy and energy-saving technologies for those with lower credit scores and those who cannot afford the upfront costs, namely LMI customers, renters, and residents of multifamily properties.[9] Utilities that offer OBF should collaborate with stakeholders to standardize a program to reduce costs and improve quality.

For example, South Carolina recently launched a pilot program, the "Help My House" Rural Energy Savings Program, spearheaded by Central Electric Power Cooperative (Central) and The Electric Cooperatives of South Carolina (ECSC). This pilot was designed to finance home efficiency upgrades through 10-year, 2.5% interest loans, which can be passed on to the next owner or tenant if the home is sold. The program provides on-bill financing for energy efficiency measures in 125 homes, and analyzes the financial impacts on the electric system shared by South Carolina's 20 co-ops. ECSC reported in 2013 that the average participant in its energy-efficiency pilot program saved $288 a year and $8,500 over the 15-year life of the improvements—after considering the typical retrofit cost of $7,684.[10] Central and ECSC helped form a non-profit, KW Savings, to administer loan funds obtained from the U.S. Department of Agriculture's Rural Economic Development Loan and Grant Program (REDLG).[11] This successful model could be broadened to benefit a larger group of customers, and also expanded to include other cost effective technologies such as solar energy.

Similarly, Seattle City Lights' Community Power Works Program partners their utility with a local non-profit community lender to provide a Craft3 On-Bill Home Energy Efficiency Loan to eligible customers. The program offers loans for terms of up to 20 years with a 4.49% interest rate (3.49% for households earning up to 80% of the Area Median Income). Customers with credit scores as low as 590 may qualify for the loans. Loan payments are included on Seattle City Lights customers' monthly utility bills.[12]

Other utilities are even developing creative ways to provide solar at zero cost to customers. For example, CPS Energy in San Antonio has collaborated with Powerfin Partners, a third-party solar developer, to create a pilot program that will allow the utility to rent customers' rooftops for solar installations. The SolarHost program will allow participating utility customers to host PV systems on their rooftops—i.e. "rent" their rooftops to CPS Energy—in exchange for credits on their energy bills.[13] The participants will not have to pay any of the costs associated with the panels, including upfront costs or maintenance costs, since CPS will own the panels. Working under a power purchase agreement with CPS Energy, Powerfin will install and operate ten megawatts of rooftop solar on homes and businesses throughout the CPS Energy service territory in San Antonio and retire the panels after 20 years. During that period, customers will receive between 20% and 30% of the energy that their solar panels produce.[14]

Likewise, Pacific Gas and Electric (PG&E) in conjunction with Habitat for Humanity, developed Solar Habitat, a program that installs solar panels for free on the rooftops of every newly built Habitat home in Northern and Central California. PG&E covers the full costs of the installations. PG&E's capital to fund the program, which it writes off as a charitable gift, comes from profits that would otherwise go to the utility's shareholders.[15] Over the last ten years, Solar Habitat has been a success for PG&E, which "delivers some of the cleanest energy in the nation."[16] Since 2005, the program has helped build and install solar panels on nearly 600 homes.[17]

2. Invest in Community Solar

For those who can't install solar at their homes, Community Solar programs offered by utilities can give us all the opportunity to "go solar" by investing in a piece of a solar project in our community and getting credit for that investment on our monthly utility bills. In addition to decreasing the cost of installing a solar system, Community Solar projects also expand access to renters, those in multifamily housing, and home-

owners whose rooftops are not suitable for solar panels. Community Solar projects, which can be utility-sponsored or third party-sponsored, offer customers the option to buy into a larger solar power system that is located in their community. To ensure broad access to Community Solar, utilities should consider the following recommendations:

Create a carve-out

For programs that only allow a certain number of customers to enroll, utilities should consider a carve-out for low-to-moderate income customers, with additional incentives as needed to drive participation. This could be funded by a small contribution from non-LMI subscribers or via another independent funding source. Utilities should reserve a certain percentage of subscriptions from each Community Solar project for LMI individuals and families in that community.

Avoid upfront costs

Customers should be given the option to pay enrollment and subscription fees over time rather than in a one time, upfront payment. These subscription fees can be quite expensive for an LMI individual and family and are one of the largest hurdles to their participation. Utilities should consider partnering with Community-Based Organizations (CBOs) to actively pursue third-party funding sources to help reduce or fully pay down these subscription costs.

Allow on bill financing

Utilities should let customers pay as they save on their utility bills. Additionally, utilities should allow subscribers to couple Community Solar enrollment with on-site energy efficiency retrofits, with overall savings offsetting the cost of participation on customers' utility bills. On-bill programs should base qualification and participation on an individual's utility bill payment history, not their credit score or history.

Reserve siting for underserved communities

Utilities should reserve between 25% and 50% of their Community Solar projects for siting in underserved communities, with community input. For example, in California, one sixth of community solar projects are reserved for siting in disadvantaged communities. Utilities should also consider siting at landfills and other brownfields sites.

Incorporate job training

Solar power can bring good-paying installation jobs to under-employed communities. Utilities offering solar programs should partner with organizations that specialize in expanding job opportunities for low income communities. For example, Grid Alternatives, a non-profit that installs solar for LMI customers, partners with nearly 70 local job training organizations to provide a classroom in the field, giving participants the experience they need to get jobs.[18]

Take advantage of additional savings opportunities

Utilities may be able to pass on additional savings to customers by incorporating other program elements that offer customers products or services that benefit the utility. For instance, the Steele-Waseca Electric Cooperative in Minnesota offers customers who participate in a demand-response program a discount on community solar. Customers who want to own a community solar panel and add a new electric water heater to their homes can have both for just $170. The individual panels are priced at $1,225 after the initial $170 offer. The $170 offer is limited to one panel per customer.[19]

See SELC's Community Solar: Best Practices for Utilities in the South for further discussion.[20]

3. Leverage existing funding to expand access to solar

To further ensure that solar power is available to any household that wants it, utilities can leverage existing federal, state, and local energy assistance funding. These funds present an opportunity for utilities to provide their LMI customers with clean, renewable energy to assist families with energy costs and improve energy

efficiency of their homes. Leveraging these programs to expand access to solar is a win-win because it will provide financial benefits to participating LMI customers, allow utilities to ensure low electric bills for those who most need bill relief, and expand clean energy investments in local communities.

Federal programs targeting rural customers include USDA's Rural Utilities Service Loan (RUS) Energy Efficiency and Conservation Loan Program (EECLP), Single Family Housing Guaranteed Loan Program, and the Rural Development Multi-Family Housing Energy Efficiency Initiative. Other federal programs include the Department of Energy's Low-income Home Energy Assistance Program (LIHEAP) and Low-income Weatherization Assistance Program (LIWAP). For instance, LIWAP recently began allocating two percent of funds for low-income solar installations.[21] In addition, President Obama recently announced an initiative to help low- and middle-income Americans gain access to solar energy. The initiative will triple the capacity of solar and other renewable energy systems installed in federally subsidized housing by 2020, make it easier for homeowners to borrow money for solar improvements and start a nationwide program to help renters gain access to solar energy.[22]

For example, North Arkansas Electric Cooperative was awarded a federal EECLP loan of $4.6 million to fund geothermal and air source installations, efficient lighting, and weatherization, including Energy Star windows and doors, insulation, water heaters, and roofing. This co-op has already loaned nearly $12 million for energy upgrades for members, and plans to further expand its energy efficiency program with the RUS funds.[23] Using the funds, the co-op provides 8-year 3% interest rate loans to eligible members who own their homes.

Similarly, the Rural Utility Service awarded Roanoke Electric Cooperative $6 million in EECLP financing in 2014 to support 200 residential energy efficiency upgrades each year. This seed capital has allowed The Roanoke Center, a non-profit subsidiary of Roanoke Electric Cooperative, to serve as their Program Operator for the "Upgrade to $ave," an on-bill financing program. This program finances cost-effective energy efficiency improvements for Roanoke Electric Cooperative ratepayers, allowing members to save on their bills without making an upfront payment or incurring new consumer debt obligations,[24] and creates jobs for local qualified contractors.[25] While neither co-op included a solar energy component in these programs, solar is one of the permitted technologies for the federal EECLP loan program.[26]

In addition to federal funding programs, other state and local energy assistance funding programs can be used to advance solar equity for LMI customers. One easy way to tap into state and local programs is to couple solar offerings with existing energy efficiency programs. For example, PosiGen, a provider of residential renewable energy and energy efficiency solutions, has piloted a successful affordable leasing program in Louisiana that serves LMI families. According to PosiGen, offering solar and energy efficiency together saves its customers 40 to 80 percent more than a typical solar power purchase agreement, which typically saves customers $10-20/month. PosiGen offers solar leases that do not require credit checks, and that guarantee a certain percentage of energy savings for participating households.[27] PosiGen's average customer nets about $65/month in electric bill savings.

Another way to leverage state and local resources is to make green bank or loan programs available to customers investing in solar. For instance, the Florida Solar and Energy Loan Fund (SELF), a non-profit lending institution created by St. Lucie County, provides low cost loans to small businesses and residents with credit scores as low as 500 for energy-saving improvements such as efficiency and solar.[28] The fund was initially created with seed money from state and federal grants, and has offered about 300 loans to date with interest rates as low as 6% and terms as long as 15 years. Participants see average energy savings of 22 percent.[29]

CONCLUSION

Solar power presents an opportunity to provide LMI customers with clean, affordable, renewable energy, helping families to control energy costs while expanding investments in local communities. We encourage utilities to adopt equitable policies such as diverse financing options, community solar, and low-income and rural energy assistance funding, in order to expand access to solar to all.

ENDNOTES

[1] *See* "National Solar Jobs Census 2014," *The Solar Foundation, available at* http://www.thesolarfoundation.org/factsheet-national-solar-jobs-census-2014/. Non-profit solar installer GRID Alternatives, for example, has several programs and initiatives to provide training and connect employers to job seekers. See http://www.gridalternatives.org/programs/workforce-development.

[2] *See* "State Policies to Increase Low Income Communities' Access to Solar Power," *Center for American Progress*, Sept. 23, 2014, *available at* https://cdn.americanprogress.org/wp-content/uploads/2014/09/LowIncomeSolar-brief.pdf.

[3] *See* "FACT SHEET: Administration Announces New Initiative to Increase Solar Access for All Americans," The White House (July 7, 2015), *available at* https://www.whitehouse.gov/the-press-office/2015/07/07/fact-sheet-administration-announces-new-initiative-increase-solar-access.

[4] *See* "Clean Power Plan," *Solar Energy Industries Association*, *available at* http://www.seia.org/policy/environment/clean-power-plan.

[5] *See* http://www.residentialsolar101.org/solar-lease.

[6] *See* Edgar Meza, "Study: American middle class embracing solar technology," *PV Magazine*, Oct. 24, 2013, *available at* http://www.pv-magazine.com/news/details/beitrag/study--american-middle-class-embracing-solar-technology-_100013208/#axzz3eTW10T5J ("60% of solar installations are being built in areas with median incomes ranging from $40,000 to $90,000").

[7] *See* "Georgia Legislature Unanimously Approves Third-Party-Owned Rooftop Solar," *Greentech Media*, Mar. 27, 2015, *available at* http://www.greentechmedia.com/articles/read/georgia-legislature-unanimously-approves-third-party-ownership-of-rooftop-s.

[8] *See* "On-Bill Financing for Energy Efficiency Improvements," *ACEEE, available at* http://aceee.org/sector/state-policy/toolkit/on-bill-financing.

[9] *See* "On-bill repayment programs," Environmental Defense Fund, available at http://www.edf.org/energy/obr; see also "On-Bill Financing: Cost-free Energy Efficiency Improvements," *National Conference of State Legislatures*, April 4, 2015, *available at* http://www.ncsl.org/research/energy/on-bill-financing-cost-free-energy-efficiency-improvements.aspx.

[10] *See* "Help My House Loan Pilot Program, Program Design and Results," *Environmental and Energy Study Institute*, *available at* http://www.eesi.org/files/HelpMyHouseBrochure_June2013.pdf.

[11] *See id.*

[12] *See* http://www.communitypowerworks.org/electric/financing/.

[13] *See* http://www.pv-magazine.com/news/details/beitrag/powerfin--cps-energy-launch-rooftop-solar-program-in-san-antonio_100021126/#ixzz3m6Th7uWC.

[14] *See id.*

[15] *See* http://www.sfgate.com/business/article/PG-E-helps-Habitat-for-Humanity-go-solar-2521541.php.

[16] *See* http://www.gridleyherald.com/article/20150506/NEWS/150509852.

[17] *See* http://www.pge.com/en/about/community/signatureprograms/localenvironment/solarhabitat/index.page and http://www.fierceenergy.com/story/solar-habitat-all-pacific-gas-and-electric-bringing-sun-new-homeowners/2015-07-27.

[18] *See* Grid Alternatives, *available at* http://www.gridalternatives.org/partner/job-training-partnerships.

[19] Frank Jossi, "Minnesota co-op combines community solar, efficiency," *Midwest Energy News* (Jan. 28, 2015), *available at* http://midwestenergynews.com/2015/01/28/minnesota-co-op-combines-community-solar-efficiency/.

[20] *See* https://www.southernenvironment.org/uploads/publications/CommSolar_Utility_Best_Practices.PDF.

[21] *See* "Can public energy assistance funding be used for low-income solar?" *GW Solar Institute*, *available at* http://solar.gwu.edu/q-a/can-public-energy-assistance-funding-be-used-low-income-solar.

[22] *See* White House Office of the Press Secretary News Release, *FACT SHEET: Administration Announces New Initiative to Increase Solar Access for All Americans*, July 7, 2015, *available at* https://www.whitehouse.gov/the-press-office/2015/07/07/fact-sheet-administration-announces-new-initiative-increase-solar-access.

[23] *See* Anne Mayberry, USDA Office of Communications News Release, *USDA Launches New Initiative: Finances First Energy Efficiency Program Loans in Arkansas and North Carolina*, Oct. 23, 2014, *available at* http://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2014/10/0237.xml&printable=true&contentidonly=true.

[24] *See id* and http://roanokeelectric.coopwebbuilder2.com/UpgradeToSave.

[25] *See* PR Newswire, "New USDA Program for Financing Energy Efficiency Awards $6 Million to Roanoke Electric Cooperative," Oct. 23, 2014, *available at* http://www.prnewswire.com/news-releases/new-usda-program-for-financing-energy-efficiency-awards-6-million-to-roanoke-electric-cooperative-373691390.html.

[26] *See* http://www.rd.usda.gov/programs-services/energy-efficiency-and-conservation-loan-program.

[27] *See* Kat Friedrich, "Three Strategies for Low-Income Solar Programs," Clean Energy Finance Forum, Feb. 5, 2014, *available at* http://cleanenergyfinanceforum.com/2014/02/05/three-strategies-for-low-income-solar-programs/.

[28] *See* http://cleanenergyloanprogram.org/how-it-works/homeowners.

[29] *See* http://cleanenergyloanprogram.org/solar_energy_loan/SELF_Overview_Qt%202%20FY%202015%20%20FINAL.PDF.

This project is supported by:

gipl
Connecting faith, community and planet

Homes of Hope
Rebuilding Communities, Rebuilding Lives

Self-Help

Genesis

CSC

Environment Georgia

Moms Clean Air Force
Fighting for our kids' health

Southern Alliance for Clean Energy

Alabama Environmental Council

north carolina JUSTICE CENTER

NC Sustainable Energy Association

ccan Chesapeake Climate Action Network

TAP
Tennessee Alliance for Progress

North Carolina Housing Coalition

Environment North Carolina

And:

Center for Sustainable Communities
Gasp
Allendale County ALIVE, Inc.
Northside Development Corporation
Rembert Area Community Coalition

For more information, contact:

Southern Environmental Law Center

Berneta Haynes
Associate Attorney
127 Peachtree St., Suite 605
Atlanta, GA 30303-1840
bhaynes@selcga.org
SouthernEnvironment.org

Partnership for Southern Equity
TOGETHER WE PROSPER

Dwayne T. Patterson
Director
Regional Organizing and Civic Engagement
dpatterson@psequity.org

South Carolina Association for Community Economic Development
SCACED

Lowell Atkinson
Program Director
lowell@scaced.org